# Oceanographic data from Frobisher Bay in the Eastern Canadian Arctic for the year 1980

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Canadian Data Report of

Fisheries and Aquatic Sciences 332

April 1982

# OCEANOGRAPHIC DATA FROM FROBISHER BAY IN THE EASTERN CANADIAN ARCTIC FOR THE YEAR 1980

by

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## ABSTRACT

Lovrity, J. E. 1982. Oceanographic data from Frobisher Bay in the Eastern Canadian Arctic for the year 1980. Can. Data Rep. Fish. Aquat. Sci. 332: v + 49 p.

Tables of oceanographic data from 27 station occupations in Frobisher Bay include information on temperature, salinity, nitrate, nitrite, ammonia, phosphate, silicate, particulate and dissolved organic carbon, chlorophyll a, b, and c, and total counts of bateria.

Key words: Arctic waters, Canada coast, sea ice, temperature, salinity, nutrients, carbon, chlorophyll, bacteria counts.

## RESUME

Lovrity, J. E. 1982. Oceanographic data from Frobisher Bay in the Eastern Canadian Arctic for the year 1980. Can. Data Rep. Fish. Aquat. Sci. 332: v + 49 p.

Tables des donées physiques et chimique de 27 stations occupées dans la Baie Frobisher en 1980 incluant de renseignements sur les temperature, salinité, nitrates, nitrites, ammoniac, phosphates, silicates, les carbones particulaires et dissouts, les chlorophylles a, b, et c, et les comptes totaux de cellules bactériennes.

# ACKNOWLEDGEMENTS

The data used in this report were collected in support of ongoing marine biological research by the Arctic Biological Station, and form part of the phytoplankton and microbiology studies under S. I. C. Hsiao and J. N. Bunch. The microbiology investigation participated in the Eastern Arctic Marine Environmental Studies (EAMES) program which was funded in 1980 by Petro-Canada. Douglas Hope provided major logistical and technical support throughout the program. Collecting and laboratory analyses were done by F. Daoust, E. Deland, F. Dugré, M. DeFeydeau, J. Fife, R. C. Harland, J. Laliberté, B. Marcille and L. Martin. I thank A. Thériault and P. Bannon for their assistance at the Ikaluit Research Laboratory, Frobisher Bay. I express my appreciation to Lois McMullon for her invaluable role in the preparation of the typescript and in the production of the final report.

# INTRODUCTION

The collections of data included in the report were made to support ongoing marine research by the Arctic Biological Station and to conclude the Eastern Arctic Marine Environmental Studies (EAMES) program. Samplings were carried out in upper Frobisher Bay from March to September, 1980, by using snowmobiles on the sea ice or a 6.7-metre freighter canoe specially equipped for oceanographic work.

The sea ice was sampled in the spring and early summer and the data obtained are placed at the beginning of the data tables.

To show conditions within the water column during a single tidal cycle, nine sets of data were collected at Station 80-1 on July 30 and 31 and they are included in the tables.

Breaking up of the ice cover over Station 80-1 and the final clearing of the ice are indicated as footnotes in the data tables. Normally after breakup, when the ice clears out of upper Frobisher Bay, an almost totally ice-free period follows and remains until new ice forms at the beginning of the next winter. In 1980, however, after initial clearing, extensive fields of broken ice returned intermittently to upper Frobisher Bay, driven by wind and tide, and remained until almost the end of August.

## METHODS

Ice core samples for nutrient and other analyses were collected with a 7.6-cm SIPRE (CRREL) corer. The cores were cut with a teflon coated saw to three equal lengths, the sections placed in polypropylene trays, thawed at room temperature and the resulting liquid subsampled for analytical work. To obtain organic carbon values and bacterial counts from the bottom of the sea ice, 5-cm sections were cut off from the lower surface of several cores and thawed in glass at room temperature. Handling of the sections and subsampling of liquid was consistent with analytical requirements for carbon.

During collecting work from the ice, the undersurface of the ice was considered as the surface depth (0 metre) and subsequent collecting depths were measured from that point. Total station depth was measured from the surface of the water in the ice hole and recorded as such in this report.

Standard oceanographic depths determined and regularly used by the Arctic Biological Station were again sampled in 1980. In support of certain studies on photosynthesis a single set of samples was collected at St. 80-51. On that occasion multiples of the secchi disc reading were used to determine collection depths.

When collecting from boats, standard collecting procedures were followed. Water temperatures were measured by plunging an immersion thermometer into the water collecting bottle immediately after it was returned to the surface.

Salinity values were determined using a Bissett Berman model 6230 laboratory salinometer or a Goldberg T/C model 10419 refractometer.

Phosphate-phosphorus, nitrite-nitrogen, nitrate-nitrogen and silicate-silicon, were analysed following Strickland and Parsons (Bull. Fish. Res. Board Can. 167, 2nd ed. 1972). Chlorophyll *a*, *b*, and *c*, were analysed following Strickland and Parsons and the values were corrected by using the equations of Jeffrey and Humphrey (Biochem. Physiol. Pflanz. 167, 1975). Ammonia-nitrogen was analysed following the descriptions of G. Dal Pont et al. (Rep. Div. Fish Oceanogr. CSIRO, Cronulla, 55, 1974). Particulate and dissolved organic carbon data and total count figures of bacteria were obtained following Bunch (Fish. Mar. Serv. MS Rep. 1515, 1979).

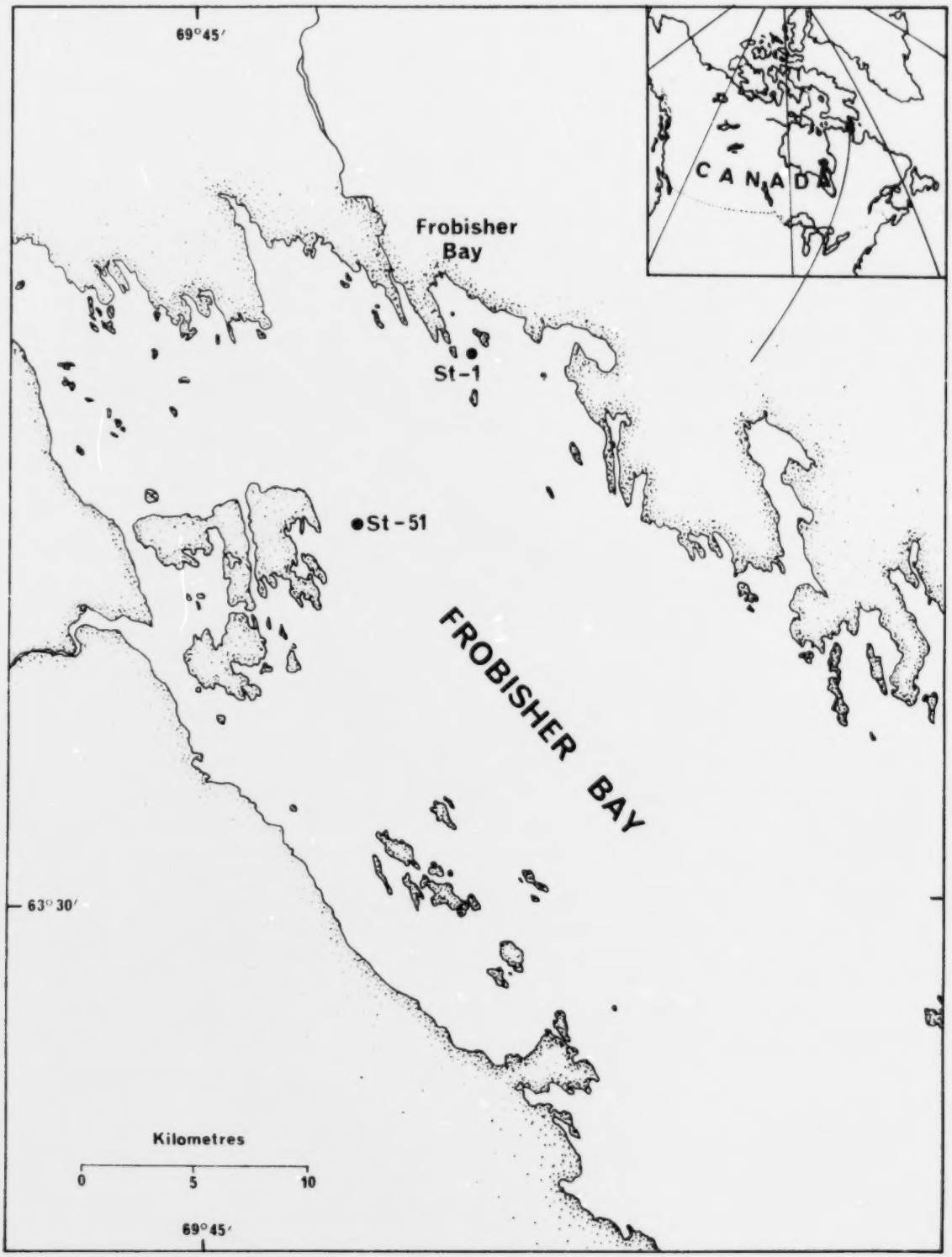
69°45′
Frobisher
Bay
St-1
St-51
FROBISHER BAY
63°30′
Kilometres
0
5
10
69°45′
CANADA

Table 1. Station locations.

| Station | N. Latitude | W. Longitude |
|---|---|---|
| 80-1 | 63°42.8' | 68°30.8' |
| 80-51 | 63°38.8' | 68°35.6' |

Table 2. Explanations of data headings.

Table headings

| | |
|---|---|
| Time: | Local, in hours |
| Station depth: | Depth to bottom, in metres |
| Air temp.: | Air temperature, in degrees Celsius |
| Cloud: | Cover, in eighths |
| Wind: | Direction, in compass points; speed, in km per hour |
| Ice cover: | Thickness of sea ice, in centimetres |
| Snow cover: | Thickness of snow, in centimetres |
| Secchi: | Secchi disc depth, in metres |

Water properties

| | |
|---|---|
| Depth (water): | Depth of sample, in metres |
| Depth (ice): | Thickness and location of sample, in centimetres |
| Temp.: | Water temperature, in degrees Celsius |
| Salinity: | As parts per thousand |
| $NO_2$-N: | Nitrite, as microgram-atoms per litre |
| $NO_3$-N: | Nitrate, as microgram-atoms per litre |
| $PO_4$-P: | Phosphate, as microgram-atoms per litre |
| $SiO_3$-Si: | Silicate, as microgram-atoms per litre |
| $NH_3$-N: | Ammonia, as microgram-atoms per litre |
| POC: | Particulate organic carbon, as micrograms per litre |
| DOC: | Dissolved organic carbon, as milligrams per litre |
| Ch.a: | Chlorophyll a, as milligrams per cubic metre |
| Ch.b: | Chlorophyll b, as milligrams per cubic metre |
| Ch.c: | Chlorophyll c, as milligrams per cubic metre |
| Bacteria: | Total count of bacteria, as log number per litre |

Table 3. Ice data, 1980.

| Station | Date | Time | Sta. depth | Air temp. |
|---|---|---|---|---|
| 80-1 | 12 Mar 80 | 1230 | 43.5 | -25.5 |
| **Cloud** | **Wind** | **Ice cover** | **Snow cover** | **Secchi** |
| 8 | W4 | 137 | 15 | 5.5 |

| Depth | Temp. | Salinity | $NO_2$-N | $NO_3$-N | $PO_4$-P | $SiO_3$-Si |
|---|---|---|---|---|---|---|
| 0- 45 | - | 4.768 | 0.08 | 0.69 | 0.27 | 2.50 |
| 45- 91 | - | 3.705 | 0.00 | 0.42 | 0.15 | 4.94 |
| 91-137 | - | 6.327 | 0.02 | 1.13 | 0.49 | 1.60 |
| 132-137 | - | - | - | - | - | - |

| Depth | $NH_3$-N | POC | DOC | Ch.a | Ch.b | Ch.c | Bacteria |
|---|---|---|---|---|---|---|---|
| 0- 45 | 4.07 | - | - | 1.06 | 0.34 | 2.22 | - |
| 45- 91 | 1.55 | - | - | 0.21 | 0.11 | 0.16 | - |
| 91-137 | 2.84 | - | - | 7.06 | 0.00 | 2.15 | - |
| 132-137 | - | 770 | 5.7 | - | - | - | 7.71 |

| Station | Date | Time | Sta. depth | Air temp. |
|---|---|---|---|---|
| 80-1 | 6 May 80 | 1430 | 45.5 | 4.2 |
| **Cloud** | **Wind** | **Ice cover** | **Snow cover** | **Secchi** |
| 8 | NW5 | 162 | 28 | - |

| Depth | Temp. | Salinity | $NO_2$-N | $NO_3$-N | $PO_4$-P | $SiO_3$-Si |
|---|---|---|---|---|---|---|
| 0- 54 | - | 4.886 | 0.09 | 0.33 | 0.08 | 4.98 |
| 54-108 | - | 5.090 | 0.07 | 0.46 | 0.05 | 3.18 |
| 108-162 | - | 4.021 | 0.04 | 0.95 | 0.20 | 6.30 |
| 157-162 | - | - | - | - | - | - |

| Depth | $NH_3$-N | POC | DOC | Ch.a | Ch.b | Ch.c | Bacteria |
|---|---|---|---|---|---|---|---|
| 0- 54 | 3.16 | - | - | 0.38 | 0.20 | 0.51 | - |
| 54-108 | 3.29 | - | - | 1.04 | 0.23 | 0.61 | - |
| 108-162 | 2.82 | - | - | 21.97 | 0.00 | 5.16 | - |
| 157-162 | - | 1960 | 0.4 | - | - | - | 8.36 |

| Station | Date | Time | Sta. depth | Air temp. |
|---|---|---|---|---|
| 80-1 | 6 Jun 80 | 1130 | 43.5 | 1.8 |
| **Cloud** | **Wind** | **Ice cover** | **Snow cover** | **Secchi** |
| 8 | SE20 | 152 | 5 | 5.5 |

| Depth | Temp. | Salinity | $NO_2$-N | $NO_3$-N | $PO_4$-P | $SiO_3$-Si |
|---|---|---|---|---|---|---|
| 0- 50 | - | <2.8 | 0.06 | 0.58 | 0.07 | 0.00 |
| 50-101 | - | <2.8 | 0.04 | 0.36 | 0.05 | 0.00 |
| 101-152 | - | <2.8 | 0.05 | 0.48 | 0.24 | 0.00 |

| Depth | $NH_3$-N | POC | DOC | Ch.a | Ch.b | Ch.c | Bacteria |
|---|---|---|---|---|---|---|---|
| 0- 50 | 1.38 | - | - | 1.23 | 1.50 | 2.32 | - |
| 50-101 | 2.14 | - | - | 0.84 | 0.72 | 1.33 | - |
| 101-152 | 3.37 | - | - | 1.57 | 0.83 | 1.65 | - |

| Station | Date | Time | Sta. depth | Air temp. |
|---|---|---|---|---|
| 80-1 | 13 Jun 80 | 1608 | 42 | 5 |
| **Cloud** | **Wind** | **Ice cover** | **Snow cover** | **Secchi** |
| 7 | N25 | 158 | 2 | - |

| Depth | Temp. | Salinity | $NO_2$-N | $NO_3$-N | $PO_4$-P | $SiO_3$-Si |
|---|---|---|---|---|---|---|
| 0 - 52.5 | - | <2.8 | 0.03 | 0.09 | 0.05 | 0.00 |
| 52.5-105 | - | <2.8 | 0.02 | 0.10 | 0.07 | 0.75 |
| 105 -158 | - | <2.8 | 0.03 | 0.07 | 0.12 | 0.00 |
| 153 -158 | - | - | - | - | - | - |

| Depth | $NH_3$-N | POC | DOC | Ch.a | Ch.b | Ch.c | Bacteria |
|---|---|---|---|---|---|---|---|
| 0 - 52.5 | 1.25 | - | - | 0.63 | 0.54 | 1.24 | - |
| 52.5-105 | 2.35 | - | - | 0.83 | 0.81 | 1.42 | - |
| 105 -158 | 1.35 | - | - | 1.73 | 0.31 | 1.04 | - |
| 153 -158 | - | 1400 | 7.3 | - | - | - | - |

| Station | Date | Time | Sta. depth | Air temp. |
|---|---|---|---|---|
| 80-1 | 20 Jun 80 | 0750 | 40.5 | 7 |
| **Cloud** | **Wind** | **Ice cover** | **Snow cover** | **Secchi** |
| 1 | NW2 | 100 | 5 | - |

| Depth | Temp. | Salinity | $NO_2$-N | $NO_3$-N | $PO_4$-P | $SiO_3$-Si |
|---|---|---|---|---|---|---|
| 0- 33 | - | <2.8 | 0.02 | 0.21 | 0.12 | 0.00 |
| 33- 66 | - | <2.8 | 0.01 | 0.20 | 0.00 | 0.00 |
| 66-100 | - | <2.8 | 0.00 | 0.18 | 0.12 | 0.84 |
| 95-100 | - | - | - | - | - | - |

| Depth | $NH_3$-N | POC | DOC | Ch.a | Ch.b | Ch.c | Bacteria |
|---|---|---|---|---|---|---|---|
| 0- 33 | 1.98 | - | - | 0.76 | 0.45 | 0.64 | - |
| 33- 66 | 1.47 | - | - | 0.94 | 0.95 | 1.45 | - |
| 66-100 | 1.76 | - | - | 1.63 | 0.25 | 0.57 | - |
| 95-100 | - | 1180 | 7.1 | - | - | - | - |

Table 4. Frobisher Bay oceanographic data, 1980.

Station: 80-1

| Station | Date | Time | Sta. depth | Air temp. |
|---|---|---|---|---|
| 80-1 | 13 Mar 80 | 1100 | 43.5 | -23.7 |
| **Cloud** | **Wind** | **Ice cover** | **Snow cover** | **Secchi** |
| 4 | WNW41 | 137 | 15 | 6 |

| Depth | Temp. | Salinity | $NO_2$-N | $NO_3$-N | $PO_4$-P | $SiO_3$-Si |
|---|---|---|---|---|---|---|
| 0 | -1.8 | 32.560 | 0.06 | 6.74 | 1.03 | 8.22 |
| 1 | -1.8 | 32.194 | 0.07 | 6.06 | 1.13 | 5.39 |
| 3 | -1.8 | 33.532 | 0.08 | 6.92 | 1.08 | 6.69 |
| 5 | -1.8 | 33.230 | 0.07 | 6.65 | 1.08 | 7.94 |
| 7 | -1.8 | 33.083 | 0.09 | 2.76 | 1.23 | 6.09 |
| 10 | -1.8 | 33.342 | 0.08 | 6.66 | 1.11 | 9.88 |
| 20 | -1.8 | 33.342 | 0.07 | 2.47 | 1.16 | 12.38 |
| 30 | -1.8 | 33.520 | 0.08 | 5.72 | 1.03 | 9.38 |
| 40 | -1.8 | 33.704 | 0.09 | 6.83 | 1.11 | 12.25 |

| Depth | $NH_3$-N | POC | DOC | Ch.a | Ch.b | Ch.c | Bacteria |
|---|---|---|---|---|---|---|---|
| 0 | 0.43 | 70 | 1.4 | 0.12 | 0.09 | 0.12 | 8.11 |
| 1 | 0.13 | 80 | 1.7 | 0.00 | 0.00 | 0.00 | 8.03 |
| 3 | 0.30 | 80 | 1.2 | 0.09 | 0.13 | 0.00 | 7.99 |
| 5 | 0.36 | 40 | 1.5 | 0.09 | 0.07 | 0.01 | 7.99 |
| 7 | 0.30 | 90 | 1.4 | 0.42 | 0.29 | 0.55 | 8.40 |
| 10 | 0.43 | 90 | 1.6 | 0.09 | 0.23 | 0.11 | 8.34 |
| 20 | 0.30 | 120 | 1.8 | 0.14 | 0.11 | 0.00 | 8.40 |
| 30 | 0.46 | 70 | 1.1 | 0.13 | 0.01 | 0.00 | 7.86 |
| 40 | 0.99 | 110 | 1.5 | 0.28 | 0.00 | 0.01 | 7.95 |

| Station | Date | Time | Sta. depth | Air temp. |
|---|---|---|---|---|
| 80-1 | 7 May 80 | 1020 | 45.5 | 5.5 |
| **Cloud** | **Wind** | **Ice cover** | **Snow cover** | **Secchi** |
| 8 | 0 | 162 | 28 | 5.5 |

| Depth | Temp. | Salinity | $NO_2$-N | $NO_3$-N | $PO_4$-P | $SiO_3$-Si |
|---|---|---|---|---|---|---|
| 0 | -1.8 | 31.751 | 0.09 | 10.12 | 1.02 | 18.53 |
| 1 | -1.8 | 32.683 | 0.01 | 7.25 | 0.88 | 14.64 |
| 3 | -1.8 | 33.205 | 0.04 | 7.02 | 1.03 | 15.59 |
| 5 | -1.8 | 33.381 | 0.01 | 8.68 | 1.06 | 17.96 |
| 7 | -1.8 | 33.467 | 0.07 | 9.00 | 1.01 | 15.69 |
| 10 | -1.8 | 33.474 | 0.18 | 8.49 | 1.09 | 17.77 |
| 20 | -1.7 | 33.568 | 0.08 | 7.21 | 0.90 | 14.55 |
| 30 | -1.7 | 33.494 | 0.17 | 5.34 | 0.81 | 13.79 |
| 40 | -1.7 | 33.497 | 0.09 | 7.61 | 0.44 | 18.34 |

| Depth | $NH_3$-N | POC | DOC | Ch.a | Ch.b | Ch.c | Bacteria |
|---|---|---|---|---|---|---|---|
| 0 | 0.11 | 70 | 1.3 | 0.13 | 0.12 | 0.09 | 8.04 |
| 1 | 0.05 | 60 | 1.5 | 0.19 | 0.19 | 0.24 | 8.27 |
| 3 | 0.47 | 40 | 1.3 | 0.18 | 0.17 | 0.12 | 8.16 |
| 5 | 0.00 | 70 | 1.8 | 0.10 | 0.37 | 0.44 | 8.02 |
| 7 | 0.41 | 70 | 1.4 | 0.14 | 0.15 | 0.13 | 8.16 |
| 10 | 0.00 | 50 | 1.4 | 0.15 | 0.19 | 0.22 | 8.06 |
| 20 | 0.00 | 40 | 1.6 | 0.13 | 0.10 | 0.14 | 8.03 |
| 30 | 0.00 | 40 | 1.7 | 0.16 | 0.08 | 0.13 | 8.19 |
| 40 | 0.05 | 80 | 1.4 | 0.22 | 0.23 | 0.21 | 8.06 |

| Station | Date | Time | Sta. depth | Air temp. |
|---|---|---|---|---|
| 80-1 | 6 Jun 80 | 1130 | 43.5 | 1.8 |
| **Cloud** | **Wind** | **Ice cover** | **Snow cover** | **Secchi** |
| 8 | SE20 | 152 | 5 | - |

| Depth | Temp. | Salinity | $NO_2$-N | $NO_3$-N | $PO_4$-P | $SiO_3$-Si |
|---|---|---|---|---|---|---|
| 0 | 0.0 | 17.719 | 0.08 | 4.74 | 0.43 | 12.54 |
| 1 | 0.0 | 18.878 | 0.10 | 5.04 | 0.45 | 3.35 |
| 3 | -1.6 | 33.196 | 0.13 | 7.67 | 0.79 | 8.10 |
| 5 | -1.5 | 32.634 | 0.09 | 6.99 | 0.67 | 6.76 |
| 7 | -1.5 | 32.480 | 0.11 | 7.65 | 0.81 | 7.81 |
| 10 | -1.8 | 33.351 | 0.10 | 6.84 | 0.64 | 5.24 |
| 20 | -1.8 | 33.384 | 0.12 | 7.82 | 0.76 | 7.43 |
| 30 | -1.7 | 33.374 | 0.10 | 8.11 | 0.67 | 6.67 |
| 40 | -1.5 | 33.426 | 0.14 | 5.77 | 0.64 | 8.76 |

| Depth | $NH_3$-H | POC | DOC | Ch.a | Ch.b | Ch.c | Bacteria |
|---|---|---|---|---|---|---|---|
| 0 | 0.43 | 240 | 1.6 | 0.95 | 0.17 | 0.57 | 8.03 |
| 1 | 1.03 | 210 | 2.7 | 0.84 | 0.12 | 0.63 | 8.02 |
| 3 | 0.64 | 40 | 1.4 | 0.24 | 0.00 | 0.00 | 7.97 |
| 5 | 0.87 | 40 | 1.1 | 1.18 | 1.34 | 2.16 | 7.94 |
| 7 | 0.98 | 50 | 1.3 | 1.85 | 2.76 | 4.10 | 8.02 |
| 10 | 0.38 | 40 | 1.8 | 1.65 | 2.41 | 3.71 | 7.97 |
| 20 | 0.24 | 40 | 2.0 | 1.12 | 1.46 | 2.25 | 8.13 |
| 30 | - | 120 | 2.2 | 1.56 | 2.20 | 3.35 | 7.88 |
| 40 | 0.46 | 60 | 2.3 | - | - | - | 8.04 |

| Station | Date | Time | Sta. depth | Air temp. |
|---|---|---|---|---|
| 80-1 | 13 Jun 80 | 1608 | 42 | 5 |
| **Cloud** | **Wind** | **Ice cover** | **Snow cover** | **Secchi** |
| 7 | N25 | 158 | 2 | - |

| Depth | Temp. | Salinity | $NO_2$-N | $NO_3$-N | $PO_4$-P | $SiO_3$-Si |
|---|---|---|---|---|---|---|
| 0 | -0.5 | 10.349 | 0.07 | 2.64 | 0.26 | 10.49 |
| 1 | -1.0 | 27.363 | 0.06 | 5.74 | 0.76 | 15.74 |
| 3 | -1.5 | 31.161 | 0.09 | 6.73 | 0.85 | 13.46 |
| 5 | -1.5 | 32.842 | 0.07 | 6.25 | 0.85 | 8.80 |
| 7 | -1.5 | 32.975 | 0.10 | 7.11 | 0.97 | 8.32 |
| 10 | -1.5 | 33.063 | 0.10 | 7.19 | 0.88 | 9.56 |
| 20 | -1.5 | 33.215 | 0.09 | 6.42 | 0.83 | 22.11 |
| 30 | -1.5 | 33.280 | 0.08 | 7.26 | 0.90 | 8.61 |
| 40 | -1.5 | 33.313 | 0.09 | 7.40 | 0.88 | 8.51 |

| Depth | $NH_3$-N | POC | DOC | Ch.a | Ch.b | Ch.c | Bacteria |
|---|---|---|---|---|---|---|---|
| 0 | 1.11 | 90 | 1.4 | 0.42 | 0.41 | 0.65 | 7.77 |
| 1 | 0.57 | 90 | 1.4 | 1.35 | 2.06 | 2.89 | 8.30 |
| 3 | 0.51 | 110 | 1.1 | 1.20 | 1.79 | 2.45 | 8.11 |
| 5 | 0.60 | 40 | 1.4 | 1.20 | 1.78 | 2.57 | 7.96 |
| 7 | 1.05 | 40 | 1.2 | 1.82 | 3.02 | 4.48 | 8.11 |
| 10 | 1.13 | 40 | 1.2 | 1.63 | 2.68 | 3.97 | 8.18 |
| 20 | 0.38 | 70 | 1.4 | 1.99 | 2.43 | 3.83 | 8.14 |
| 30 | 1.02 | 30 | 1.3 | 2.14 | 3.29 | 5.10 | 7.96 |
| 40 | 1.30 | 40 | 1.2 | 1.25 | 1.83 | 2.77 | 7.91 |

| Station | Date | Time | Sta. depth | Air temp. |
|---|---|---|---|---|
| 80-1 | 20 Jun 80 | 0750 | 40.5 | 7 |
| **Cloud** | **Wind** | **Ice cover** | **Snow cover** | **Secchi** |
| 1 | NW2 | 100 | 5 | - |

| Depth | Temp. | Salinity | $NO_2$-N | $NO_3$-N | $PO_4$-P | $SiO_3$-Si |
|---|---|---|---|---|---|---|
| 0 | 0.5 | <2.8 | 0.00 | 0.38 | 0.02 | 0.84 |
| 1 | 0.0 | 17.638 | 0.03 | 3.55 | 0.45 | 10.06 |
| 3 | -1.0 | 31.051 | 0.05 | 5.99 | 0.83 | 12.51 |
| 5 | -1.0 | 32.237 | 0.09 | 6.34 | 1.09 | 14.41 |
| 7 | -1.0 | 32.319 | 0.07 | 5.88 | 0.85 | 10.41 |
| 10 | -1.2 | 32.982 | 0.07 | 6.12 | 0.83 | 14.31 |
| 20 | -1.5 | 33.088 | 0.06 | 6.39 | 0.85 | 14.88 |
| 30 | -1.5 | 33.154 | 0.10 | 6.37 | 0.85 | 11.17 |
| 40 | -1.5 | 33.187 | 0.08 | 7.13 | 0.95 | 12.70 |

| Depth | $NH_3$-N | POC | DOC | Ch.a | Ch.b | Ch.c | Bacteria |
|---|---|---|---|---|---|---|---|
| 0 | 0.49 | 160 | 1.6 | 0.36 | 0.47 | 0.41 | 7.91 |
| 1 | 0.82 | 140 | 1.9 | 0.66 | 0.83 | 1.11 | 8.12 |
| 3 | 0.67 | 70 | 1.3 | 1.01 | 1.44 | 2.06 | 8.08 |
| 5 | 0.31 | 70 | 1.4 | 0.95 | 1.48 | 1.95 | 8.02 |
| 7 | 0.20 | 70 | 1.8 | 1.01 | 1.33 | 2.10 | 8.12 |
| 10 | 0.31 | 90 | 2.8 | 0.58 | 0.50 | 0.91 | 8.14 |
| 20 | 0.02 | 90 | 2.6 | 1.20 | 1.78 | 2.57 | 8.05 |
| 30 | 0.24 | 90 | 2.5 | 0.95 | 1.45 | 2.19 | 7.99 |
| 40 | 0.74 | 140 | 2.2 | 0.75 | 1.13 | 1.56 | 7.89 |

| Station | Date | Time | Sta. depth | Air temp. |
|---|---|---|---|---|
| 80-1 | 1 Jul 80 | 0950 | 43 | 4.5 |
| **Cloud** | **Wind** | **Ice cover** | **Snow cover** | **Secchi** |
| 3 | S5 | 0 | 0 | - |

| Depth | Temp. | Salinity | $NO_2$-N | $NO_3$-N | $PO_4$-P | $SiO_3$-Si |
|---|---|---|---|---|---|---|
| 0 | 5.3 | <2.8 | 0.08 | 0.33 | 0.02 | 10.40 |
| 1 | 4.2 | 5.290 | 0.06 | 0.39 | 0.12 | 11.39 |
| 3 | 0.5 | 26.307 | 0.12 | 3.34 | 0.55 | 13.46 |
| 5 | -0.3 | 29.047 | 0.16 | 4.25 | 0.69 | 12.98 |
| 7 | -1.0 | 31.661 | 0.10 | 5.39 | 0.86 | 12.20 |
| 10 | -1.1 | 32.427 | 0.02 | 5.88 | 0.74 | 12.01 |
| 20 | -1.3 | 32.827 | 0.08 | 6.77 | 0.86 | 14.13 |
| 30 | -1.3 | 32.903 | 0.04 | 6.79 | 0.86 | 10.76 |
| 40 | -1.3 | 32.945 | 0.23 | 5.93 | 0.79 | 13.56 |

| Depth | $NH_3$-N | POC | DOC | Ch.a | Ch.b | Ch.c | Bacteria |
|---|---|---|---|---|---|---|---|
| 0 | 0.24 | 140 | 1.2 | 0.49 | 0.21 | 0.35 | 8.25 |
| 1 | 0.74 | 140 | 1.3 | 0.50 | 0.12 | 0.26 | 8.36 |
| 3 | 0.13 | 170 | 1.3 | 1.96 | 0.94 | 1.60 | 8.48 |
| 5 | 0.00 | 180 | 1.3 | 3.88 | 4.17 | 6.44 | 8.19 |
| 7 | 0.00 | 150 | 1.0 | 3.20 | 3.59 | 4.88 | 8.04 |
| 10 | 0.13 | 120 | 1.3 | 2.90 | 3.00 | 4.58 | 7.91 |
| 20 | 0.20 | 110 | 1.3 | 1.11 | 0.98 | 1.39 | 8.09 |
| 30 | 0.74 | 60 | 1.2 | 1.18 | 1.36 | 2.04 | 7.94 |
| 40 | 0.56 | 70 | 1.0 | 0.81 | 0.47 | 1.09 | 8.01 |

| Station | Date | Time | Sta. depth | Air temp. |
|---|---|---|---|---|
| 80-1 | 7 Jul 80 | 1410 | 43 | 6.8 |
| **Cloud** | **Wind** | **Ice cover** | **Snow cover** | **Secchi** |
| 1 | 20 | - | - | - |

| Depth | Temp. | Salinity | $NO_2$-N | $NO_3$-N | $PO_4$-P | $SiO_3$-Si |
|---|---|---|---|---|---|---|
| 0 | 6.3 | 7.380 | 0.00 | 0.00 | 0.00 | 14.11 |
| 1 | 5.2 | 13.403 | 0.00 | 0.07 | 0.00 | 11.10 |
| 3 | 0.8 | 28.472 | 0.00 | 0.11 | 0.22 | 5.55 |
| 5 | -0.2 | 31.638 | 0.06 | 0.24 | 0.55 | 9.60 |
| 7 | -0.3 | 32.030 | 0.12 | 1.01 | 0.69 | 8.92 |
| 10 | -1.0 | 32.475 | 0.16 | 3.26 | 0.84 | 8.92 |
| 20 | -1.2 | 32.655 | 0.29 | 5.49 | 0.88 | 25.62 |
| 30 | -1.2 | 32.695 | 0.21 | 5.84 | 0.88 | 16.55 |
| 40 | -1.2 | 32.740 | 0.16 | 6.65 | 0.91 | 11.63 |

| Depth | $NH_3$-N | POC | DOC | Ch.a | Ch.b | Ch.c | Bacteria |
|---|---|---|---|---|---|---|---|
| 0 | 1.25 | 190 | 1.3 | 1.15 | 0.41 | 1.00 | 8.62 |
| 1 | 1.33 | 230 | 1.2 | 1.96 | 0.91 | 1.84 | 8.65 |
| 3 | 0.71 | - | 1.3 | 5.91 | 1.28 | 3.62 | 8.58 |
| 5 | 0.49 | 540 | 1.2 | 8.73 | 0.92 | 3.57 | 8.50 |
| 7 | 0.78 | 450 | 1.3 | 9.69 | 2.86 | 6.63 | 8.40 |
| 10 | 0.60 | 310 | 1.4 | 4.97 | 0.38 | 1.68 | 8.36 |
| 20 | 1.14 | 200 | 0.9 | 3.10 | 2.71 | 4.43 | 8.38 |
| 30 | 1.54 | 80 | 1.3 | 2.25 | 2.16 | 3.38 | 8.22 |
| 40 | 1.00 | 100 | 1.2 | 1.34 | 0.87 | 1.35 | 8.17 |

| Station | Date | Time | Sta. depth | Air temp. |
|---|---|---|---|---|
| 80-1 | 13 Jul 80 | 0925 | 52 | 7.2 |
| **Cloud** | **Wind** | **Ice cover** | **Snow cover** | **Secchi** |
| 2 | SW2 | - | - | - |

| Depth | Temp. | Salinity | $NO_2$-N | $NO_3$-N | $PO_4$-P | $SiO_3$-Si |
|---|---|---|---|---|---|---|
| 0 | 5.3 | 18.046 | 0.00 | 0.06 | 0.14 | 5.43 |
| 1 | 3.6 | 24.543 | 0.00 | 0.00 | 0.19 | 3.90 |
| 3 | 1.2 | 29.200 | 0.00 | 0.00 | 0.24 | 1.62 |
| 5 | -0.2 | 31.077 | 0.00 | 0.00 | 0.31 | 3.71 |
| 7 | -0.4 | 31.731 | 0.00 | 0.00 | 0.31 | 3.71 |
| 10 | -0.9 | 32.223 | 0.00 | 0.17 | 0.33 | 0.00 |
| 20 | -1.1 | 32.483 | 0.06 | 3.18 | 0.67 | 15.43 |
| 30 | -1.3 | 32.553 | 0.06 | 4.76 | 0.71 | 12.95 |
| 40 | -1.3 | 32.581 | 0.09 | 4.73 | 0.83 | 10.38 |

| Depth | $NH_3$-N | POC | DOC | Ch.a | Ch.b | Ch.c | Bacteria |
|---|---|---|---|---|---|---|---|
| 0 | 0.90 | 170 | 1.1 | 1.70 | 1.88 | 2.96 | 8.56 |
| 1 | 0.00 | 220 | 1.2 | 1.36 | 0.67 | 1.31 | 8.53 |
| 3 | 0.04 | 400 | 1.1 | 1.98 | 0.13 | 0.97 | 8.57 |
| 5 | 0.78 | 550 | 1.1 | 5.75 | 3.58 | 6.42 | 8.53 |
| 7 | 0.57 | 550 | 1.1 | 6.43 | 3.63 | 6.54 | 8.51 |
| 10 | 0.45 | 710 | 1.1 | 9.23 | 0.00 | 2.66 | 8.49 |
| 20 | 0.70 | 440 | 1.0 | 8.99 | 2.36 | 6.22 | 8.47 |
| 30 | 0.65 | 220 | 1.1 | 4.76 | 1.38 | 3.24 | 8.02 |
| 40 | 0.57 | 240 | 1.0 | 6.42 | 4.39 | 7.66 | 8.24 |

| Station | Date | Time | Sta. depth | Air temp. |
|---|---|---|---|---|
| 80-1 | 18 Jul 80 | 1130 | 44.8 | 10 |
| **Cloud** | **Wind** | **Ice cover** | **Snow cover** | **Secchi** |
| 0 | S5 | - | - | 7.9 |

| Depth | Temp. | Salinity | $NO_2$-N | $NO_3$-N | $PO_4$-P | $SiO_3$-Si |
|---|---|---|---|---|---|---|
| 0 | 5.0 | 29.249 | 0.00 | 0.01 | 0.19 | 2.67 |
| 1 | 4.0 | 29.405 | 0.00 | 0.00 | 0.17 | 1.24 |
| 3 | 3.0 | 30.008 | 0.00 | 0.00 | 0.19 | 2.38 |
| 5 | 1.0 | 31.170 | 0.00 | 0.00 | 0.36 | 1.24 |
| 7 | 0.0 | 31.956 | 0.00 | 0.00 | 0.36 | 0.19 |
| 10 | -0.7 | 32.258 | 0.00 | 0.00 | 0.45 | 1.90 |
| 20 | -1.0 | 32.400 | 0.01 | 1.45 | 0.71 | 5.33 |
| 30 | -1.1 | 32.464 | 0.04 | 3.29 | 0.69 | 2.86 |
| 40 | -1.1 | 32.491 | 0.05 | 3.98 | 0.83 | 5.33 |

| Depth | $NH_3$-N | POC | DOC | Ch.a | Ch.b | Ch.c | Bacteria |
|---|---|---|---|---|---|---|---|
| 0 | 0.94 | 110 | 1.1 | 1.87 | 2.58 | 3.93 | 8.35 |
| 1 | 0.61 | 160 | 1.1 | 1.05 | 0.89 | 1.55 | 8.35 |
| 3 | 0.08 | 250 | 1.0 | 1.50 | 0.96 | 1.62 | 8.46 |
| 5 | 0.00 | 400 | 1.1 | 3.10 | 1.52 | 2.89 | 8.43 |
| 7 | 0.00 | 520 | 1.1 | 5.85 | 3.08 | 6.11 | 8.26 |
| 10 | 0.90 | 780 | 0.9 | 9.03 | 1.32 | 4.84 | 8.53 |
| 20 | 1.35 | 670 | 1.1 | 14.03 | 3.04 | 9.29 | 8.44 |
| 30 | 0.41 | 410 | 0.9 | 9.19 | 1.41 | 5.11 | 8.29 |
| 40 | 0.70 | 320 | 1.0 | 6.81 | 0.07 | 2.74 | 8.25 |

| Station | Date | Time | Sta. depth | Air temp. |
|---|---|---|---|---|
| 80-1 | 25 Jul 80 | 1020 | 43 | 5 |
| **Cloud** | **Wind** | **Ice cover** | **Snow cover** | **Secchi** |
| 8 | NE25 | - | - | 5 |

| Depth | Temp. | Salinity | $NO_2$-N | $NO_3$-N | $PO_4$-P | $SiO_3$-Si |
|---|---|---|---|---|---|---|
| 0 | 4.5 | 29.143 | 0.01 | 0.06 | 0.35 | 7.58 |
| 1 | 3.5 | 30.935 | 0.00 | 0.04 | 0.25 | 15.50 |
| 3 | 2.5 | 31.502 | 0.00 | 0.00 | 0.30 | 2.91 |
| 5 | 2.2 | 31.840 | 0.00 | 0.02 | 0.25 | 3.03 |
| 7 | 2.2 | 31.822 | 0.01 | 0.00 | 0.25 | 3.61 |
| 10 | 1.7 | 31.897 | 0.01 | 0.06 | 0.30 | 0.58 |
| 20 | -0.2 | 32.336 | 0.03 | 1.24 | 0.54 | 3.61 |
| 30 | -0.5 | 32.436 | 0.07 | 2.62 | 0.68 | 5.59 |
| 40 | -0.7 | 32.493 | 0.07 | 3.04 | 0.70 | 8.39 |

| Depth | $NH_3$-N | POC | DOC | Ch.a | Ch.b | Ch.c | Bacteria |
|---|---|---|---|---|---|---|---|
| 0 | 0.00 | 190 | 2.1 | 0.83 | 0.22 | 0.59 | 8.78 |
| 1 | 0.00 | 320 | 1.9 | 1.07 | 0.13 | 0.43 | 8.55 |
| 3 | 0.00 | 310 | 2.7 | 1.64 | 0.01 | 0.76 | 8.80 |
| 5 | 0.00 | 370 | 3.2 | 1.92 | 0.17 | 0.85 | 8.68 |
| 7 | 0.00 | 350 | 2.6 | 2.00 | 0.00 | 1.20 | 8.59 |
| 10 | 0.00 | 440 | 2.0 | 2.16 | 0.00 | 0.74 | 8.38 |
| 20 | 0.00 | 590 | 2.6 | 5.84 | 0.69 | 3.04 | 8.41 |
| 30 | 0.08 | 370 | 2.3 | 5.13 | 0.00 | 1.73 | 8.38 |
| 40 | 0.16 | 520 | 1.9 | 4.10 | 0.00 | 1.42 | 8.29 |

| Station | Date | Time | Sta. depth | Air temp. |
|---|---|---|---|---|
| 80-1 | 30 Jul 80 | 1100 | 49 | 7 |
| **Cloud** | **Wind** | **Ice cover** | **Snow cover** | **Secchi** |
| 4 | SW8 | - | - | 9 |

| Depth | Temp. | Salinity | $NO_2$-N | $NO_3$-N | $PO_4$-P | $SiO_3$-Si |
|---|---|---|---|---|---|---|
| 0 | 2.2 | 31.775 | 0.00 | 0.00 | 0.36 | 2.96 |
| 1 | 2.0 | 31.783 | 0.00 | 0.00 | 0.24 | 2.37 |
| 3 | 1.3 | 31.980 | 0.00 | 0.00 | 0.45 | 5.03 |
| 5 | 1.9 | 31.863 | 0.00 | 0.00 | 0.38 | 6.21 |
| 7 | 0.7 | 32.173 | 0.00 | 0.07 | 0.45 | 4.53 |
| 10 | 0.3 | 32.256 | 0.00 | 0.53 | 0.55 | 5.32 |
| 20 | -0.3 | 32.384 | 0.02 | 2.04 | 0.63 | 22.18 |
| 30 | -0.4 | 32.434 | 0.02 | 2.66 | 0.72 | 7.20 |
| 40 | -0.5 | 32.457 | 0.02 | 3.06 | 0.76 | 12.22 |

| Depth | $NH_3$-N | POC | DOC | Ch.a | Ch.b | Ch.c | Bacteria |
|---|---|---|---|---|---|---|---|
| 0 | 0.00 | 320 | 2.1 | 1.23 | 0.22 | 0.70 | 8.86 |
| 1 | 0.00 | 260 | 2.0 | 1.30 | 0.10 | 0.61 | 8.65 |
| 3 | 0.00 | 550 | 1.8 | 1.92 | 0.07 | 0.77 | 8.73 |
| 5 | 0.00 | 1170 | 1.5 | 1.41 | 0.12 | 0.80 | 8.79 |
| 7 | 0.39 | 400 | 1.3 | 3.17 | 0.13 | 1.06 | 8.72 |
| 10 | 0.00 | 310 | 1.5 | 3.42 | 0.00 | 0.98 | 8.66 |
| 20 | 0.00 | 260 | 1.9 | 3.65 | 0.00 | 1.11 | 8.57 |
| 30 | 0.24 | 280 | 2.0 | 3.53 | 0.00 | 1.25 | 8.43 |
| 40 | - | 220 | 1.4 | 3.19 | 0.00 | 1.13 | 8.36 |

| Station | Date | Time | Sta. depth | Air temp. |
|---|---|---|---|---|
| 80-1 | 30 Jul 80 | 1310 | 48 | - |
| **Cloud** | **Wind** | **Ice cover** | **Snow cover** | **Secchi** |
| - | - | - | - | - |

| Depth | Temp. | Salinity | $NO_2$-N | $NO_3$-N | $PO_4$-P | $SiO_3$-Si |
|---|---|---|---|---|---|---|
| 0 | 2.5 | 32 | 0.00 | 0.00 | 0.33 | 9.46 |
| 1 | 3.4 | 32 | 0.00 | 0.00 | 0.38 | 3.55 |
| 3 | 2.6 | 32 | 0.00 | 0.00 | 0.38 | 3.15 |
| 5 | 1.8 | 32 | 0.00 | 0.00 | 0.38 | 5.22 |
| 7 | 1.4 | 33 | 0.00 | 0.00 | 0.38 | 4.04 |
| 10 | 0.8 | 34 | 0.00 | 0.00 | 0.41 | 2.86 |
| 20 | -0.2 | 34 | 0.00 | 1.15 | 0.55 | 14.69 |
| 30 | -0.4 | 34 | 0.00 | 2.06 | 0.69 | 9.96 |
| 40 | -0.6 | 34 | 0.01 | 1.98 | 0.67 | 6.90 |

| Depth | $NH_3$-N | POC | DOC | Ch.a | Ch.b | Ch.c | Bacteria |
|---|---|---|---|---|---|---|---|
| 0 | - | 550 | 1.3 | 0.73 | 0.09 | 0.44 | 8.89 |
| 1 | 0.00 | 510 | 2.5 | 0.62 | 0.06 | 0.37 | 8.82 |
| 3 | 0.99 | 580 | 1.1 | 1.13 | 0.09 | 0.55 | 8.88 |
| 5 | 0.39 | 490 | 1.3 | 1.69 | 0.20 | 0.68 | 8.86 |
| 7 | 1.29 | 320 | 2.8 | 1.98 | 0.14 | 0.85 | 8.74 |
| 10 | 0.62 | 350 | 1.2 | 2.71 | 0.17 | 0.95 | 8.84 |
| 20 | 0.06 | 250 | 1.6 | 3.70 | 0.00 | 1.23 | 8.57 |
| 30 | 0.21 | 250 | 1.2 | 3.59 | 0.00 | 1.12 | 8.57 |
| 40 | 0.47 | 190 | 1.3 | 3.30 | 0.00 | 0.62 | 8.49 |

| Station | Date | Time | Sta. depth | Air temp. |
|---|---|---|---|---|
| 80-1 | 30 Jul 80 | 1540 | 40 | - |
| **Cloud** | **Wind** | **Ice cover** | **Snow cover** | **Secchi** |
| - | 0 | - | - | - |

| Depth | Temp. | Salinity | $NO_2$-N | $NO_3$-N | $PO_4$-P | $SiO_3$-Si |
|---|---|---|---|---|---|---|
| 0 | 2.7 | 19.707 | 0.00 | 0.00 | 0.24 | 5.52 |
| 1 | 3.0 | 31.570 | 0.00 | 0.00 | 0.36 | 0.00 |
| 3 | 2.4 | 31.630 | 0.00 | 0.00 | 0.38 | 1.18 |
| 5 | 1.6 | 31.945 | 0.00 | 0.00 | 0.36 | 9.27 |
| 7 | 1.1 | 31.916 | 0.00 | 0.00 | 0.38 | 13.11 |
| 10 | -0.1 | 32.127 | 0.00 | 0.00 | 0.45 | 0.00 |
| 20 | -0.1 | 32.371 | 0.00 | 0.86 | 0.53 | 1.18 |
| 30 | -0.4 | 32.416 | 0.01 | 1.83 | 0.65 | 3.06 |
| 40 | -0.3 | 32.435 | 0.02 | 1.95 | 0.65 | 2.46 |

| Depth | $NH_3$-N | POC | DOC | Ch.a | Ch.b | Ch.c | Bacteria |
|---|---|---|---|---|---|---|---|
| 0 | 1.90 | 130 | 1.9 | 0.44 | 0.14 | 0.39 | 8.86 |
| 1 | 0.11 | 230 | 2.2 | 0.85 | 0.05 | 0.30 | 8.98 |
| 3 | 0.66 | 210 | 1.9 | 1.35 | 0.16 | 0.68 | 8.81 |
| 5 | 0.19 | 280 | 1.3 | 1.64 | 0.12 | 0.73 | 8.85 |
| 7 | 0.49 | 270 | 1.6 | 1.69 | 0.18 | 0.80 | 8.87 |
| 10 | 0.36 | 450 | 1.8 | 2.43 | 0.11 | 0.95 | 8.79 |
| 20 | 0.92 | 510 | 1.8 | 3.75 | 0.02 | 1.39 | 8.64 |
| 30 | 0.88 | 330 | 1.8 | 3.46 | 0.06 | 1.34 | 8.40 |
| 40 | 1.00 | 230 | 2.3 | 3.34 | 0.12 | 1.36 | 8.51 |

| Station | Date | Time | Sta. depth | Air temp. |
|---|---|---|---|---|
| 80-1 | 30 Jul 80 | 1855 | 41 | - |
| **Cloud** | **Wind** | **Ice cover** | **Snow cover** | **Secchi** |
| - | - | - | - | - |

| Depth | Temp. | Salinity | $NO_2$-N | $NO_3$-N | $PO_4$-P | $SiO_3$-Si |
|---|---|---|---|---|---|---|
| 0 | 2.8 | 32 | 0.01 | 0.12 | 0.33 | 1.96 |
| 1 | 2.7 | 34 | 0.00 | 0.00 | 0.33 | 1.31 |
| 3 | 1.9 | 34 | 0.01 | 0.03 | 0.31 | 3.18 |
| 5 | 1.5 | 34 | 0.02 | 0.02 | 0.33 | 3.93 |
| 7 | 1.1 | 34 | 0.00 | 0.07 | 0.35 | 4.02 |
| 10 | 0.7 | 34 | 0.00 | 0.11 | 0.38 | 2.99 |
| 20 | 0.0 | 34 | 0.03 | 0.63 | 0.40 | 4.40 |
| 30 | -0.5 | 34 | 0.02 | 1.64 | 0.61 | 4.58 |
| 40 | -0.4 | 34 | 0.04 | 1.80 | 0.59 | 6.64 |

| Depth | $NH_3$-N | POC | DOC | Ch.a | Ch.b | Ch.c | Bacteria |
|---|---|---|---|---|---|---|---|
| 0 | 0.00 | 270 | 1.9 | 1.14 | 0.62 | 0.92 | 8.91 |
| 1 | 0.33 | 250 | 1.5 | 1.04 | 0.39 | 0.81 | 8.80 |
| 3 | 0.29 | 250 | 2.0 | 1.38 | 0.41 | 0.93 | 8.69 |
| 5 | 0.00 | 250 | 2.4 | 1.82 | 0.55 | 1.32 | 8.80 |
| 7 | 0.14 | 290 | 2.3 | 1.95 | 0.41 | 1.10 | 8.78 |
| 10 | 0.22 | 350 | 2.0 | 2.65 | 0.27 | 1.17 | 8.77 |
| 20 | 0.22 | 430 | 2.4 | 3.50 | 0.22 | 1.50 | 8.53 |
| 30 | 0.40 | 230 | 2.5 | 3.84 | 0.23 | 1.75 | 8.41 |
| 40 | 1.09 | 430 | 1.7 | 3.56 | 0.19 | 1.50 | 8.34 |

| Station | Date | Time | Sta. depth | Air temp. |
|---|---|---|---|---|
| 80-1 | 30 Jul 80 | 2135 | 49 | - |
| **Cloud** | **Wind** | **Ice cover** | **Snow cover** | **Secchi** |
| 0 | 0 | - | - | - |

| Depth | Temp. | Salinity | $NO_2$-4 | $NO_3$-N | $PO_4$-P | $SiO_3$-Si |
|---|---|---|---|---|---|---|
| 0 | 2.6 | 30.580 | 0.00 | 0.09 | 0.38 | 5.52 |
| 1 | 2.5 | 30.678 | 0.00 | 0.04 | 0.38 | 4.30 |
| 3 | 1.7 | 31.490 | 0.00 | 0.07 | 0.42 | 4.21 |
| 5 | 0.9 | 31.986 | 0.00 | 0.07 | 0.42 | 5.24 |
| 7 | 0.7 | 32.083 | 0.00 | 0.07 | 0.42 | 4.96 |
| 10 | 0.3 | 32.228 | 0.00 | 0.47 | 0.49 | 3.84 |
| 20 | -0.3 | 32.371 | 0.02 | 1.58 | 0.66 | 10.57 |
| 30 | -0.5 | 32.419 | 0.03 | 2.67 | 0.68 | 10.57 |
| 40 | -0.6 | 32.452 | 0.04 | 2.91 | 0.71 | 8.33 |

| Depth | $NH_3$-N | POC | DOC | Ch.a | Ch.b | Ch.c | Bacteria |
|---|---|---|---|---|---|---|---|
| 0 | 0.36 | 250 | 2.2 | 1.05 | 0.27 | 0.97 | 8.67 |
| 1 | 0.15 | 270 | 0.3 | 1.17 | 0.23 | 0.83 | 8.82 |
| 3 | 0.19 | 280 | 1.4 | 1.52 | 0.16 | 0.87 | 8.67 |
| 5 | 0.75 | 270 | 1.8 | 2.48 | 0.16 | 1.15 | 8.70 |
| 7 | 0.62 | 360 | 2.2 | 2.71 | 0.13 | 1.32 | 8.59 |
| 10 | 0.11 | 380 | 1.9 | 3.29 | 0.05 | 1.28 | 8.66 |
| 20 | 0.49 | 290 | 1.9 | 3.98 | 0.00 | 1.48 | 8.51 |
| 30 | 0.79 | 210 | 1.4 | 3.47 | 0.00 | 1.38 | 8.44 |
| 40 | 0.53 | 200 | 1.4 | 3.25 | 0.00 | 1.25 | 8.43 |

| Station | Date | Time | Sta. depth | Air temp. |
|---|---|---|---|---|
| 80-1 | 31 Jul 80 | 0115 | 45 | 3.8 |
| **Cloud** | **Wind** | **Ice cover** | **Snow cover** | **Secchi** |
| - | - | - | - | - |

| Depth | Temp. | Salinity | $NO_2$-N | $NO_3$-N | $PO_4$-P | $SiO_3$-Si |
|---|---|---|---|---|---|---|
| 0 | 2.9 | 22 | 0.01 | 0.15 | 0.19 | 7.86 |
| 1 | 2.5 | 32 | 0.01 | 0.06 | 0.28 | 0.37 |
| 3 | 1.4 | 32 | 0.01 | 0.01 | 0.32 | 1.87 |
| 5 | 1.1 | 32 | 0.00 | 0.09 | 0.40 | 9.82 |
| 7 | 0.5 | 33 | 0.02 | 0.22 | 0.42 | 2.06 |
| 10 | 0.3 | 33 | 0.01 | 0.26 | 0.45 | 0.19 |
| 20 | -0.3 | 34 | 0.01 | 1.32 | 0.56 | 1.50 |
| 30 | -0.4 | 34 | 0.05 | 1.88 | 0.61 | 2.53 |
| 40 | -0.4 | 34 | 0.05 | 2.43 | 0.68 | 2.99 |

| Depth | $NH_3$-N | POC | DOC | Ch.a | Ch.b | Ch.c | Bacteria |
|---|---|---|---|---|---|---|---|
| 0 | 1.36 | 120 | 1.9 | 0.32 | 0.18 | 0.53 | 8.79 |
| 1 | 0.32 | 220 | 1.4 | 1.01 | 0.13 | 0.69 | 8.75 |
| 3 | 0.76 | 290 | 1.5 | 1.80 | 0.21 | 0.99 | 8.78 |
| 5 | 0.00 | 320 | 2.2 | 2.26 | 0.08 | 1.01 | 8.73 |
| 7 | 0.58 | 360 | 2.4 | 3.06 | 0.06 | 1.36 | 8.81 |
| 10 | 0.00 | 420 | 1.5 | 3.34 | 0.10 | 1.48 | 8.69 |
| 20 | 0.54 | 300 | 1.4 | 3.87 | 0.00 | 1.49 | 8.70 |
| 30 | 0.13 | 380 | 2.4 | 3.48 | 0.00 | 1.38 | 8.51 |
| 40 | 0.43 | 280 | 1.4 | 3.42 | 0.00 | 1.30 | 8.51 |

| Station | Date | Time | Sta. depth | Air temp. |
|---|---|---|---|---|
| 80-1 | 31 Jul 80 | 0425 | 41 | - |
| **Cloud** | **Wind** | **Ice cover** | **Snow cover** | **Secchi** |
| - | 0 | - | - | - |

| Depth | Temp. | Salinity | $NO_2$-N | $NO_3$-N | $PO_4$-P | $SiO_3$-Si |
|---|---|---|---|---|---|---|
| 0 | 5.1 | 30.101 | 0.00 | 0.23 | 0.33 | 2.97 |
| 1 | 2.8 | 30.456 | 0.00 | 0.01 | 0.26 | 1.93 |
| 3 | 2.4 | 31.495 | 0.00 | 0.00 | 0.26 | 3.82 |
| 5 | 2.1 | 31.667 | 0.01 | 0.02 | 0.38 | 4.58 |
| 7 | 1.1 | 32.017 | 0.01 | 0.05 | 0.43 | 3.35 |
| 10 | 0.7 | 32.210 | 0.00 | 0.19 | 0.52 | 4.01 |
| 20 | 0.2 | 32.341 | 0.01 | 0.56 | 0.54 | 6.75 |
| 30 | -0.3 | - | 0.02 | 1.32 | 0.64 | 4.39 |
| 40 | -0.3 | 32.429 | 0.04 | 1.70 | 0.64 | 7.60 |

| Depth | $NH_3$-N | POC | DOC | Ch.a | Ch.b | Ch.c | Bacteria |
|---|---|---|---|---|---|---|---|
| 0 | 0.00 | 200 | 2.1 | 0.85 | 0.03 | 0.54 | 8.92 |
| 1 | 0.07 | 290 | 1.3 | 1.06 | 0.19 | 0.76 | 8.88 |
| 3 | 0.07 | 300 | 2.1 | 1.23 | 0.20 | 0.82 | 8.77 |
| 5 | 0.00 | 350 | 1.4 | 1.57 | 0.21 | 1.06 | 8.84 |
| 7 | 0.00 | 400 | 1.5 | 2.27 | 0.00 | 0.93 | 8.88 |
| 10 | 0.11 | 330 | 1.5 | 3.07 | 0.00 | 1.27 | 8.82 |
| 20 | 0.07 | 340 | 1.6 | 3.94 | 0.00 | 1.44 | 8.67 |
| 30 | 0.11 | 400 | 1.4 | 3.81 | 0.00 | 1.54 | 8.58 |
| 40 | 0.25 | 270 | 1.8 | 3.59 | 0.00 | 1.36 | 8.57 |

| Station | Date | Time | Sta. depth | Air temp. |
|---|---|---|---|---|
| 80-1 | 31 Jul 80 | 0705 | 41.5 | 8.5 |
| **Cloud** | **Wind** | **Ice cover** | **Snow cover** | **Secchi** |
| - | S4 | - | - | - |

| Depth | Temp. | Salinity | $NO_2$-N | $NO_3$-N | $PO_4$-P | $SiO_3$-Si |
|---|---|---|---|---|---|---|
| 0 | 4.3 | - | 0.01 | 0.05 | 0.33 | 7.98 |
| 1 | 3.0 | - | 0.02 | 0.01 | 0.33 | 2.88 |
| 3 | 2.0 | - | 0.00 | 0.00 | 0.40 | 3.16 |
| 5 | 1.3 | - | 0.00 | 0.03 | 0.47 | 5.90 |
| 7 | 1.1 | - | 0.02 | 0.04 | 0.54 | 4.86 |
| 10 | 0.6 | - | 0.02 | 0.24 | 0.50 | 2.97 |
| 20 | 0.0 | - | 0.05 | 1.05 | 0.50 | 8.92 |
| 30 | -0.3 | - | 0.05 | 1.98 | 0.54 | 10.24 |
| 40 | -0.4 | - | 0.05 | 2.49 | 0.59 | 9.01 |

| Depth | $NH_3$-N | POC | DOC | Ch.a | Ch.b | Ch.c | Bacteria |
|---|---|---|---|---|---|---|---|
| 0 | 1.06 | 160 | 1.6 | 0.45 | 0.65 | 1.02 | 8.82 |
| 1 | 0.39 | 230 | 2.4 | 0.76 | 0.35 | 0.56 | 8.84 |
| 3 | 0.13 | 260 | 2.8 | 1.55 | 0.46 | 0.62 | 8.83 |
| 5 | 0.21 | 330 | 1.9 | 2.29 | 0.45 | 1.10 | 8.86 |
| 7 | 0.17 | 330 | 2.0 | 2.36 | 0.33 | 1.00 | 8.80 |
| 10 | 0.99 | 330 | 1.5 | 2.97 | 0.49 | 1.33 | 8.76 |
| 20 | 0.54 | 310 | 1.9 | 3.67 | 0.24 | 1.44 | 8.62 |
| 30 | 0.39 | 290 | 1.4 | 3.68 | 0.14 | 1.48 | 8.54 |
| 40 | 0.76 | 230 | 3.3 | 3.38 | 0.30 | 1.28 | 8.57 |

| Station | Date | Time | Sta. depth | Air temp. |
|---|---|---|---|---|
| 80-1 | 31 Jul 80 | 1015 | 48 | 8.9 |
| **Cloud** | **Wind** | **Ice cover** | **Snow cover** | **Secchi** |
| 1 | SE5 | - | - | 9 |

| Depth | Temp. | Salinity | $NO_2$-N | $NO_3$-N | $PO_4$-P | $SiO_3$-Si |
|---|---|---|---|---|---|---|
| 0 | 3.9 | 18.190 | 0.00 | 0.10 | 0.17 | 8.06 |
| 1 | 3.2 | 29.975 | 0.01 | 0.00 | 0.26 | 0.52 |
| 3 | 2.0 | 31.625 | 0.01 | 0.00 | 0.35 | 1.27 |
| 5 | 1.5 | 31.873 | 0.00 | 0.00 | 0.38 | 10.43 |
| 7 | 1.1 | 31.999 | 0.01 | 0.00 | 0.31 | 1.18 |
| 10 | 0.5 | 32.216 | 0.00 | 0.06 | 0.52 | 0.00 |
| 20 | -0.2 | 32.376 | 0.01 | 1.09 | 0.59 | 0.61 |
| 30 | -0.3 | 32.398 | 0.01 | 1.40 | 0.61 | 1.18 |
| 40 | -0.3 | 32.427 | 0.04 | 1.81 | 0.59 | 1.46 |

| Depth | $NH_3$-N | POC | DOC | Ch.a | Ch.b | Ch.c | Bacteria |
|---|---|---|---|---|---|---|---|
| 0 | 1.30 | 90 | 1.5 | 0.47 | 0.48 | 0.72 | 8.78 |
| 1 | 0.07 | 200 | 2.8 | 0.89 | 0.21 | 0.46 | 8.89 |
| 3 | 0.00 | 270 | 1.8 | 1.57 | 0.24 | 0.82 | 8.83 |
| 5 | 0.27 | 360 | 2.3 | 2.13 | 0.33 | 1.07 | 8.85 |
| 7 | 0.00 | 340 | 2.3 | 2.59 | 0.31 | 1.05 | 8.81 |
| 10 | 0.29 | 380 | 2.7 | 3.38 | 0.29 | 1.40 | 8.70 |
| 20 | 0.29 | 250 | 1.9 | 3.84 | 0.25 | 1.50 | 8.65 |
| 30 | 0.33 | 240 | 2.5 | 3.86 | 0.07 | 1.33 | 8.58 |
| 40 | 0.54 | 220 | 3.1 | 3.15 | 0.45 | 0.94 | 8.45 |

| Station | Date | Time | Sta. depth | Air temp. |
|---|---|---|---|---|
| 80-1 | 7 Aug 80 | 1255 | 42 | 5 |
| **Cloud** | **Wind** | **Ice cover** | **Snow cover** | **Secchi** |
| 5 | SE45 | - | - | - |

| Depth | Temp. | Salinity | $NO_2$-N | $NO_3$-N | $PO_4$-P | $SiO_3$-Si |
|---|---|---|---|---|---|---|
| 0 | 2 | 31.997 | 0.01 | 0.37 | 0.18 | 2.62 |
| 1 | 1 | 31.944 | 0.01 | 0.32 | 0.25 | 1.60 |
| 3 | 1 | 31.892 | 0.02 | 0.31 | 0.18 | 1.34 |
| 5 | 1 | 32.052 | 0.04 | 0.29 | 0.27 | 2.24 |
| 7 | 1 | 32.101 | 0.04 | 0.41 | 0.37 | 3.26 |
| 10 | 1 | 32.151 | 0.01 | 0.32 | 0.32 | 2.75 |
| 20 | 0 | 32.303 | 0.03 | 0.69 | 0.32 | 3.78 |
| 30 | -1 | 32.471 | 0.03 | 1.72 | 0.49 | 4.67 |
| 40 | -1 | 32.532 | 0.07 | 3.82 | 0.80 | 10.17 |

| Depth | $NH_3$-N | POC | DOC | Ch.a | Ch.b | Ch.c | Bacteria |
|---|---|---|---|---|---|---|---|
| 0 | 0.10 | 360 | 1.8 | 2.65 | 0.17 | 1.21 | 8.83 |
| 1 | 0.00 | 390 | 1.5 | 2.99 | 0.87 | 2.24 | 8.86 |
| 3 | 0.00 | 310 | 1.9 | 2.82 | 0.26 | 1.47 | 8.95 |
| 5 | 0.02 | 420 | 2.1 | 2.82 | 0.28 | 1.23 | 8.87 |
| 7 | 0.25 | 390 | 2.1 | 3.21 | 0.37 | 1.42 | 8.80 |
| 10 | 0.00 | 350 | 2.1 | 3.76 | 0.56 | 1.76 | 8.85 |
| 20 | 0.27 | 250 | 1.7 | 3.68 | 0.15 | 1.36 | 8.69 |
| 30 | 1.33 | 240 | 1.4 | 2.88 | 1.45 | 2.76 | 8.72 |
| 40 | 1.52 | 250 | 1.8 | 1.40 | 0.23 | 0.76 | 8.58 |

| Station | Date | Time | Sta. depth | Air temp. |
|---|---|---|---|---|
| 80-1 | 14 Aug 80 | 1140 | 50 | 6.9 |
| **Cloud** | **Wind** | **Ice cover** | **Snow cover** | **Secchi** |
| 7 | W7 | - | - | 7.5 |

| Depth | Temp. | Salinity | $NO_2$-N | $NO_3$-N | $PO_4$-P | $SiO_3$-Si |
|---|---|---|---|---|---|---|
| 0 | 3.0 | 31.044 | 0.00 | 0.16 | 0.24 | 1.99 |
| 1 | 2.8 | 31.452 | 0.02 | 0.12 | 0.29 | 0.58 |
| 3 | 1.3 | 32.180 | 0.02 | 0.17 | 0.41 | 0.93 |
| 5 | 0.9 | 32.361 | 0.01 | 0.11 | 0.41 | 2.70 |
| 7 | 0.6 | 32.393 | 0.00 | 0.16 | 0.41 | 1.73 |
| 10 | 0.2 | 32.496 | 0.01 | 0.43 | 0.48 | 2.26 |
| 20 | 0.0 | 32.550 | 0.02 | 0.61 | 0.41 | 3.32 |
| 30 | - | 32.562 | 0.01 | 0.48 | 0.48 | 1.46 |
| 40 | 0.0 | 32.577 | 0.03 | 0.55 | 0.48 | 3.50 |

| Depth | $NH_3$-N | POC | DOC | Ch.a | Ch.b | Ch.c | Bacteria |
|---|---|---|---|---|---|---|---|
| 0 | 0.18 | 200 | 2.0 | 1.48 | 0.00 | 0.62 | 8.79 |
| 1 | 0.00 | 260 | 1.3 | 2.04 | 0.01 | 0.88 | 8.77 |
| 3 | 0.00 | 450 | 1.2 | 3.53 | 0.00 | 1.29 | 8.75 |
| 5 | 0.04 | 420 | 1.6 | 4.32 | 0.02 | 1.56 | 8.79 |
| 7 | 0.04 | 450 | 1.8 | 5.29 | 0.00 | 1.75 | 8.72 |
| 10 | 0.12 | 360 | 2.5 | 5.26 | 0.00 | 1.51 | 8.64 |
| 20 | 0.60 | 250 | 1.5 | 3.99 | 0.00 | 1.15 | 8.68 |
| 30 | 0.73 | 240 | 1.5 | 3.88 | 0.00 | 1.08 | 8.58 |
| 40 | 0.89 | 160 | 1.8 | 2.80 | 0.00 | 0.81 | 8.53 |

| Station | Date | Time | Sta. depth | Air temp |
|---|---|---|---|---|
| 80-1 | 21 Aug 80 | 1125 | 42 | 11 |
| **Cloud** | **Wind** | **Ice cover** | **Snow cover** | **Secchi** |
| 8 | 0 | - | - | 7 |

| Depth | Temp. | Salinity | $NO_2$-N | $NO_3$-N | $PO_4$-P | $SiO_3$-Si |
|---|---|---|---|---|---|---|
| 0 | 6.5 | 8.493 | 0.02 | 1.00 | 0.17 | 16.60 |
| 1 | 4.5 | 29.843 | 0.02 | 0.09 | 0.39 | 5.78 |
| 3 | 2.0 | 31.883 | 0.01 | 0.05 | 0.41 | 0.75 |
| 5 | 1.0 | 32.329 | 0.01 | 0.07 | 0.48 | 0.93 |
| 7 | 0.0 | 32.508 | 0.00 | 0.13 | 0.48 | 0.58 |
| 10 | 0.0 | 32.553 | 0.02 | 0.79 | 0.51 | 1.55 |
| 20 | 0.0 | 32.621 | 0.02 | 1.90 | 0.80 | 4.38 |
| 30 | 0.0 | 32.622 | 0.04 | 1.47 | 0.80 | 2.26 |
| 40 | 0.0 | 32.723 | 0.02 | 1.96 | 0.82 | 2.88 |

| Depth | $NH_3$-N | POC | DOC | Ch.a | Ch.b | Ch.c | Bacteria |
|---|---|---|---|---|---|---|---|
| 0 | 0.71 | 80 | 1.1 | 0.00 | 0.00 | 0.00 | 8.59 |
| 1 | 0.00 | 170 | 1.4 | 2.06 | 2.94 | 4.20 | 8.77 |
| 3 | 0.00 | 250 | 1.2 | 1.55 | 0.51 | 1.07 | 8.86 |
| 5 | 0.00 | 430 | 2.3 | 3.40 | 0.12 | 1.11 | 8.85 |
| 7 | 0.00 | 570 | 2.8 | 6.12 | 0.27 | 2.18 | 8.85 |
| 10 | 0.00 | 470 | 1.5 | 6.49 | 0.00 | 2.09 | 8.80 |
| 20 | 1.37 | 150 | 4.7 | 1.98 | 0.13 | 0.97 | 8.73 |
| 30 | 1.37 | 170 | 1.4 | 2.07 | 0.33 | 1.33 | 8.60 |
| 40 | 1.54 | 180 | 2.2 | 1.23 | 1.50 | 2.32 | 8.62 |

| Station | Date | Time | Sta. depth | Air temp |
|---|---|---|---|---|
| 80-1 | 28 Aug 80 | 1110 | 46 | 6 |
| **Cloud** | **Wind** | **Ice cover** | **Snow cover** | **Secchi** |
| 4 | SE8 | - | - | - |

| Depth | Temp. | Salinity | $NO_2$-N | $NO_3$-N | $PO_4$-P | $SiO_3$-Si |
|---|---|---|---|---|---|---|
| 0 | 2.5 | 30.962 | 0.00 | 0.24 | 0.48 | 3.30 |
| 1 | 2.5 | 31.085 | 0.00 | 0.26 | 0.51 | 2.68 |
| 3 | 1.5 | 32.187 | 0.02 | 0.26 | 0.50 | 2.05 |
| 5 | 1.0 | 32.445 | 0.00 | 0.26 | 0.54 | 2.68 |
| 7 | 1.0 | 32.439 | 0.02 | 0.31 | 0.56 | 2.43 |
| 10 | 0.5 | 32.563 | 0.01 | 0.84 | 0.59 | 3.05 |
| 20 | 0.5 | 32.626 | 0.03 | 0.99 | 0.66 | 3.30 |
| 30 | 0.0 | 32.644 | 0.04 | 1.26 | 0.67 | 3.17 |
| 40 | 0.5 | 32.658 | 0.17 | 1.21 | 0.68 | 4.67 |

| Depth | $NH_3$-N | POC | DOC | Ch.a | Ch.b | Ch.c | Bacteria |
|---|---|---|---|---|---|---|---|
| 0 | 1.18 | 250 | 1.7 | 1.71 | 0.61 | 1.22 | 9.06 |
| 1 | 0.38 | 310 | 1.4 | 1.79 | 0.29 | 1.20 | 8.93 |
| 3 | 0.61 | 370 | 1.6 | 3.01 | 0.00 | 1.16 | 8.91 |
| 5 | 0.61 | 520 | 1.4 | 3.86 | 0.06 | 1.45 | 8.96 |
| 7 | 0.55 | 400 | 1.6 | 4.88 | 1.32 | 3.22 | 8.92 |
| 10 | 0.71 | 300 | 1.4 | 4.02 | 0.17 | 1.48 | 8.84 |
| 20 | 0.98 | 300 | 2.2 | 3.70 | 0.00 | 1.31 | 8.75 |
| 30 | 0.78 | 360 | 1.5 | 3.57 | 0.11 | 1.29 | 8.77 |
| 40 | 1.18 | 900 | 2.0 | 8.15 | 0.39 | 2.90 | 8.76 |

| Station | Date | Time | Sta. depth | Air temp. |
|---|---|---|---|---|
| 80-1 | 4 Sep 80 | 1050 | 38 | 8 |
| **Cloud** | **Wind** | **Ice cover** | **Snow cover** | **Secchi** |
| 0 | NE8 | - | - | 10.5 |

| Depth | Temp. | Salinity | $NO_2$-N | $NO_3$-N | $PO_4$-P | $SiO_3$-Si |
|---|---|---|---|---|---|---|
| 0 | 3.5 | 27.347 | 0.00 | 0.33 | 0.51 | 8.55 |
| 1 | 3.0 | 29.307 | 0.00 | 0.17 | 0.51 | 5.78 |
| 3 | 2.0 | 31.733 | 0.01 | 0.00 | 0.51 | 2.91 |
| 5 | 1.0 | 32.234 | 0.00 | 0.00 | 0.58 | 3.47 |
| 7 | 1.0 | 32.518 | 0.00 | 0.00 | 0.58 | 3.10 |
| 10 | 0.0 | 32.632 | 0.00 | 0.38 | 0.60 | 3.47 |
| 20 | -0.5 | - | 0.01 | 1.47 | 0.68 | 5.22 |
| 30 | -0.5 | 32.716 | 0.02 | 1.71 | 0.75 | 5.04 |
| 37 | -0.5 | 32.753 | 0.03 | 1.94 | 0.85 | 6.15 |

| Depth | $NH_3$-N | POC | DOC | Ch.a | Ch.b | Ch.c | Bacteria |
|---|---|---|---|---|---|---|---|
| 0 | 0.00 | 120 | 1.2 | 0.32 | 0.20 | 0.29 | 8.90 |
| 1 | 0.00 | 120 | 1.4 | 0.55 | 0.20 | 0.22 | 8.92 |
| 3 | 0.00 | 200 | 1.3 | 2.04 | 0.14 | 0.59 | 8.82 |
| 5 | 0.00 | 250 | 1.6 | 1.29 | 0.24 | 0.20 | 8.89 |
| 7 | 0.00 | 300 | 1.3 | 3.07 | 0.02 | 0.78 | 8.88 |
| 10 | 0.00 | 370 | 1.3 | 3.59 | 0.00 | 1.00 | 8.86 |
| 20 | 0.68 | 180 | 1.2 | 1.47 | 0.13 | 0.42 | 8.68 |
| 30 | 0.82 | 200 | 1.6 | 1.25 | 0.05 | 0.41 | 8.64 |
| 37 | 0.95 | 110 | 1.3 | 0.78 | 0.17 | 0.39 | 8.59 |

| Station | Date | Time | Sta. depth | Air temp. |
|---|---|---|---|---|
| 80-1 | 11 Sep 80 | 1020 | 44.5 | 2.5 |
| **Cloud** | **Wind** | **Ice cover** | **Snow cover** | **Secchi** |
| 8 | E6 | - | - | - |

| Depth | Temp. | Salinity | $NO_2$-N | $NO_3$-N | $PO_4$-P | $SiO_3$-Si |
|---|---|---|---|---|---|---|
| 0 | 2.0 | 27.044 | 0.00 | 0.50 | 0.44 | 8.97 |
| 1 | 1.5 | 31.226 | 0.00 | 0.05 | 0.46 | 2.93 |
| 3 | 1.0 | 32.087 | 0.00 | 0.16 | 0.53 | 2.93 |
| 5 | 0.0 | 32.512 | 0.00 | 0.41 | 0.56 | 4.17 |
| 7 | 0.0 | 32.603 | 0.00 | 0.50 | 0.60 | 3.88 |
| 10 | 0.0 | 32.614 | 0.00 | 0.68 | 0.63 | 4.46 |
| 20 | 0.0 | 32.716 | 0.04 | 1.73 | 0.77 | 7.15 |
| 30 | 0.0 | 32.742 | 0.05 | 1.91 | 0.77 | 5.61 |
| 40 | -0.5 | 32.729 | 0.05 | 2.18 | 0.80 | 7.05 |

| Depth | $NH_3$-N | POC | DOC | Ch.a | Ch.b | Ch.c | Bacteria |
|---|---|---|---|---|---|---|---|
| 0 | 0.00 | 110 | 1.6 | 0.64 | 0.00 | 0.20 | 8.90 |
| 1 | 0.00 | 300 | 1.6 | 1.95 | 0.41 | 1.10 | 8.99 |
| 3 | 0.00 | 230 | 1.1 | 4.22 | 0.00 | 1.20 | 8.97 |
| 5 | 0.00 | 320 | 1.0 | 2.28 | 0.00 | 0.72 | 8.88 |
| 7 | 0.00 | 280 | 1.5 | 4.50 | 0.00 | 1.32 | 8.88 |
| 10 | 0.00 | 260 | 1.3 | 4.50 | 0.00 | 1.32 | 8.93 |
| 20 | 0.00 | 190 | 1.4 | 2.32 | 0.09 | 0.63 | 8.74 |
| 30 | 0.40 | 130 | - | 1.86 | 0.19 | 0.86 | 8.73 |
| 40 | 0.57 | 190 | 1.6 | 1.59 | 0.00 | 0.44 | 8.70 |

| Station | Date | Time | Sta. depth | Air temp. |
|---|---|---|---|---|
| 80-1 | 18 Sep 80 | 1235 | 46 | 4 |
| **Cloud** | **Wind** | **Ice cover** | **Snow cover** | **Secchi** |
| 8 | SE7 | - | - | 8 |

| Depth | Temp. | Salinity | $NO_2$-N | $NO_3$-N | $PO_4$-P | $SiO_3$-Si |
|---|---|---|---|---|---|---|
| 0 | 2.0 | 32.100 | 0.00 | 0.12 | 0.48 | 2.77 |
| 1 | 2.0 | 32.214 | 0.01 | 0.02 | 0.51 | 2.20 |
| 3 | 1.5 | 32.441 | 0.00 | 0.00 | 0.53 | 2.11 |
| 5 | 1.0 | 32.395 | 0.00 | 0.09 | 0.51 | 2.96 |
| 7 | 1.0 | 32.593 | 0.00 | 0.44 | 0.56 | 3.14 |
| 10 | 1.0 | 32.576 | 0.00 | 0.65 | 0.58 | 3.61 |
| 20 | 1.0 | 32.678 | 0.00 | 1.31 | 0.60 | 4.55 |
| 30 | 1.0 | 32.686 | 0.00 | 1.71 | 0.75 | 5.40 |
| 40 | -0.5 | 32.771 | 0.00 | 1.58 | 0.73 | 4.93 |

| Depth | $NH_3$-N | POC | DOC | Ch.a | Ch.b | Ch.c | Bacteria |
|---|---|---|---|---|---|---|---|
| 0 | 0.68 | 230 | 1.3 | 1.93 | 0.00 | 0.81 | 9.01 |
| 1 | 1.34 | 230 | 1.2 | 2.21 | 0.02 | 0.93 | 8.95 |
| 3 | 1.13 | 300 | 1.1 | 3.71 | 0.00 | 1.26 | 8.87 |
| 5 | 1.16 | 360 | 1.3 | 4.91 | 0.00 | 1.60 | 8.85 |
| 7 | 0.92 | 220 | 1.6 | 5.25 | 0.00 | 1.47 | 8.79 |
| 10 | 0.16 | 210 | 1.2 | 4.95 | 0.00 | 1.76 | 8.90 |
| 20 | 0.47 | 140 | 1.1 | 3.14 | 0.00 | 1.05 | 8.93 |
| 30 | 1.20 | 100 | 1.3 | 2.02 | 0.27 | 1.25 | 8.81 |
| 40 | 1.82 | 80 | 1.2 | 1.07 | 0.10 | 0.68 | 8.82 |

Table 4 (continued). Frobisher Bay oceanographic data, 1980.

Station: 80-51

| Station | Date | Time | Sta. depth | Air temp. |
|---|---|---|---|---|
| 80-51 | 31 Aug 80 | 1255 | 225 | 4.5 |
| **Cloud** | **Wind** | **Ice cover** | **Snow cover** | **Secchi** |
| 0 | 0 | - | - | 13 |

| Depth | Temp. | Salinity | $NO_2$-N | $NO_3$-N | $PO_4$-P | $SiO_3$-Si |
|---|---|---|---|---|---|---|
| 0 | 1.5 | 32.491 | 0.00 | 1.12 | 0.61 | 4.47 |
| 13 | 0.0 | 32.528 | 0.00 | 1.07 | 0.61 | 3.41 |
| 26 | 0.0 | 32.611 | 0.02 | 1.00 | 0.64 | 3.60 |
| 32.5 | 0.0 | 32.565 | 0.02 | 0.91 | 0.61 | 4.66 |
| 39 | 0.0 | 32.656 | 0.02 | 0.91 | 0.66 | 4.66 |
| 52 | 0.0 | 32.714 | 0.02 | 0.97 | 0.54 | 3.60 |
| 65 | 0.0 | 32.741 | 0.04 | 1.48 | - | - |
| 78 | 0.0 | 32.742 | 0.00 | 1.17 | 0.74 | 4.76 |
| 104 | -0.5 | 32.753 | 0.04 | 1.91 | 0.76 | 6.39 |
| 130 | -0.5 | 32.753 | 0.02 | 2.17 | 0.81 | 4.47 |

| Depth | $NH_3$-N | POC | DOC | Ch.a | Ch.b | Ch.c | Bacteria |
|---|---|---|---|---|---|---|---|
| 0 | 1.61 | - | - | 1.35 | 0.78 | 1.27 | - |
| 13 | 1.44 | - | - | 1.13 | 0.09 | 0.55 | - |
| 26 | 1.28 | - | - | 1.33 | 0.39 | 0.49 | - |
| 32.5 | 1.51 | - | - | 1.12 | 0.23 | 0.14 | - |
| 39 | 1.64 | - | - | 1.39 | 0.36 | 0.48 | - |
| 52 | 1.81 | - | - | 1.09 | 0.00 | 0.02 | - |
| 65 | - | - | - | 0.88 | 0.34 | 0.18 | - |
| 78 | 1.74 | - | - | 1.00 | 0.26 | 0.40 | - |
| 104 | 2.24 | - | - | 0.60 | 0.28 | 0.17 | - |
| 130 | 2.34 | - | - | 0.34 | 0.03 | 0.00 | - |